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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/078,664	02/21/2002	Chiou-Hwang Lee	LEEC3054/EM	4827
7590 04/01/2004			EXAMINER	
BACON & THOMAS 4th Floor 625 Slaters Lane Alexandria, VA 22314			MEDINA SANABRIA, MARIBEL	
			ART UNIT	PAPER NUMBER
			1754	

DATE MAILED: 04/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/078,664

Applicant(s)

LEE ET AL.

Examiner

Maribel Medina

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 February 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>3/25/02</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-4 and 6-8 are rejected under 35 U.S.C. 102(b) as being anticipated by EP 1059263 A1 (Nojima *et al*).

In regards to claim 1, Nojima *et al* disclose a method for removing CO from a hydrogen-containing gas by a selective oxidation comprising the steps of: a) Preparing a zeolite catalyst carrying Pt or Ru; b) Flowing a CO-containing hydrogen-rich mixture gas and an oxygen-containing gas through said zeolite catalyst carrying Pt or Ru (See [0008], [0009], [0010], [0023], and [0024]). The catalyst is prepared by impregnating a zeolite powder with an aqueous solution containing Pt or Ru ions, followed by drying and calcining (See [0039], [0051], and [0052]).

In regards to claim 2, Nojima *et al* exemplify his invention with a Pt ion concentration of 0.4 parts by weight (See [0051] and [0052]).

In regards to claims 3 and 4, Nojima *et al* disclose that the zeolite may be Y-zeolite and mordenite (See [0019]).

In regards to claim 6, Nojima *et al* disclose that the CO-containing hydrogen-rich mixture gas and the oxygen-containing gas have a temperature in the range of between 50°C and 280°C (See [0026]).

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In regards to claim 7, Nojima *et al* disclose that the CO-containing hydrogen-rich mixture gas is obtained from a reforming process and the hydrogen-rich gas mixture produced is introduced into a fuel cell (See [0031] and [0032]).

Regarding claim 8, Nojima *et al* disclose treating a gaseous composition comprising 0.6% Co and 0.6 %O₂ (molar ratio equal to 1) (See [0058]).

No difference is seen between the instantly claimed invention and Nojima *et al* disclosure.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nojima *et al* as applied to claims 1-4 and 6-8 above, and further in view of US Patent No. 5,391,291 (Winqvist *et al*).

Nojima *et al* apply herein as above. Nojima *et al* disclose the instantly claimed invention for preparing the instantly claimed catalysts by impregnation and discloses heating and calcining the catalyst at a temperature of 500°C (See rejection above). Nojima *et al* fail to disclose the heating temperature range instantly claimed.

Winqvist *et al* is relied upon to teach a process for preparing a catalyst comprising a Y-zeolite and a noble metal such as ruthenium and platinum wherein the zeolite is impregnated with an aqueous solution containing Pt or R ions and thereafter heating at a temperature in the

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range from 25°C to 200°C and calcining at a temperature in the range from 200°C to 850°C (See col. 5, line 49 to col. 6, line 47).


It would have been obvious to one of ordinary skill in the art at the time the invention was made to have heated Nojima *et al* catalyst at a temperature in the range from 25°C to 200°C as taught by Winqvist *et al*, since Winqvist *et al* disclose that this is the temperature range used for heating an impregnated catalyst as instantly claimed. Alternatively, one of ordinary skilled in the art would have been motivated to use the temperature range of Winqvist *et al*, since his catalyst is similar in composition and process of making as the catalyst of Nojima *et al*.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Maribel Medina whose telephone number is (571) 272-1355. The examiner can normally be reached on Monday through Friday from 7:30 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on (571) 272-1358. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Maribel Medina
Examiner
Art Unit 1754